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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,988	06/27/2003	John R. Hershey	MS302100.1 / MSFTP436US	6423

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EXAMINER

AZAD, ABUL K

ART UNIT	PAPER NUMBER
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2626

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/608,988

Applicant(s)

HERSHEY ET AL.

Examiner

ABUL K. AZAD

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-22 are pending in this Office Action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(f) he did not himself invent the subject matter sought to be patented.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-22 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. Where there is a published article by Beal et al. (Audio-Video sensor fusion with probabilistic graphical models) identifying the authorship (MPEP § 715.01(c)) or a patent identifying the inventorship (MPEP § 715.01(a)) that discloses subject matter being claimed in an application undergoing examination, the designation of authorship or inventorship does not raise a presumption of inventorship with respect to the subject matter disclosed in the article or with respect to the subject matter disclosed but not claimed in the patent so as to justify a rejection under 35 U.S.C. 102(f). However, it is incumbent upon the inventors named in the application, in reply to an inquiry regarding the appropriate inventorship under subsection (f), or to rebut a rejection under 35 U.S.C. 102(a) or (e), to provide a satisfactory showing by way of affidavit under 37 CFR 1.132 that the inventorship of the application is correct in that the reference discloses subject matter invented by the applicant rather than derived from the author or patentee notwithstanding the authorship of the article or the inventorship of the patent. In re Katz, 687 F.2d 450, 455, 215 USPQ

Art Unit: 2626

14, 18 (CCPA 1982) (inquiry is appropriate to clarify any ambiguity created by an article regarding inventorship, and it is then incumbent upon the applicant to provide "a satisfactory showing that would lead to a reasonable conclusion that [applicant] is the...inventor" of the subject matter disclosed in the article and claimed in the application).

4. Claims 1-22 are rejected under 35 U.S.C. 102(a) as being anticipated by Beal et al. (Audio-Video sensor fusion with probabilistic graphical models).

As per claim 1, Beal teaches, "a system that facilitates enhancement of a speech signal comprising":

"an input component that receives a speech signal and pixel-based image data relating to an originator of the speech signal" (Fig. 1); and,

"a speech enhancement component that employs a probabilistic-based model that correlates between the speech signal and the image data so as to facilitate discrimination of noise from the speech signal, the model employing a set of hidden variables representing relevant features, the features being inferred from at least one of the speech signal and pixel-based image data" (Sections; Introduction; and Probabilistic generative modeling).

As per claim 2, Beal teaches, "the probabilistic-based model comprising an audio model" (Section Audio Model).

As per claim 3, Beal teaches, "the probabilistic-based model comprising a video model" (Section, Video Model).

As per claim 4, Beal teaches, "the probabilistic-based model comprising an Audio/video model" (Section Fusing Audio and Video).

As per claim 5, Beal teaches, "modification of at least one parameter of the probabilistic model being based upon a variational expectation maximization algorithm having an E-step and M-step" (section Parameter Estimation and Object Tracking).

As per claim 6, Beal teaches, "the expectation maximization algorithm" (equation 7).

As per claim 7, Beal teaches, "the expectation maximization algorithm" (equation 19).

As per claim 8, Beal teaches, "the expectation maximization algorithm" (equation 20).

As per claim 9, Beal teaches, "the expectation maximization algorithm" (equation 19).

As per claim 10, Beal teaches, "the image data comprising information associated with an appearance of the lips of the originator of the speech signal" (page 737, 2nd paragraph).

As per claim 11, Beal teaches, "wherein the speech component tracks the lips of the originator of the speech signal in order to facilitate discrimination of noise from the speech signal" (page 737, last paragraph).

As per claim 12, Beal teaches, "the input component further comprising a frequency transformation component that receives windowed signal inputs, computes a frequency transform of the windowed signals, and provides outputs of frequency

transformed windowed signals to the speech enhancement component” (Section Audio model).

As per claim 13, Beal teaches, “a windowing component that applies an N-point window to the speech signal and provides the windowed signal inputs to the frequency transformation component” (section Audio Model).

As per claim 14, Beal teaches, “further comprising at least two audio input devices that provide speech signals” (Fig. 1).

As per claim 15, Beal teaches, “the probabilistic-based model being trained, at least in part, during operation of the system” (section Probabilistic Generative Modeling).

As per claim 16, Beal teaches, “the features comprising at least one of a speech state and lip motion” (page 737).

As per claim 17, Beal teaches, “wherein the model incorporates an additional degree of freedom that models image translation” (section Probabilistic Generative Modeling).

As per claims 18-22, they are interpreted and thus rejected for the same reasons set forth in the rejection of claims 1-17.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(571) 272-7599**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richemond Dorvil**, can be reached at **(571) 272-7602**.

Application/Control Number: 10/608,988
Art Unit: 2626

Page 6

Any response to this action should be mailed to:

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Or faxed to: **(571) 273-8300**.

Hand-delivered responses should be brought to **401 Dulany Street, Alexandria, VA-22314** (Customer Service Window).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 6, 2007



Abul K. Azad
Primary Examiner
Art Unit 2626